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An Economic Strategy for Massachusetts

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Prepared for

Governor's Economic Summit

January 19, 1990

At the

Massachusetts Institute of Technology

Cambridge, Massachusetts

Michael S. Dukakis, Governor
Commonwealth of Massachusetts

WINNING THE 'NINETIES:
AN ECONOMIC STRATEGY
FOR MASSACHUSETTS

A DRAFT FOR DISCUSSION

January 19, 1990

Commonwealth of Massachusetts

Michael S. Dukakis,
Governor

Alden S. Raine,
Secretary of Economic Affairs

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GOVERNOR

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January 15, 1990

To the Massachusetts Economic Community:

On November 14, 1989, at MIT, I delivered an address on the future of the Massachusetts economy.

It was a call to action at the dawn of 1990--the foundation year of a decade which will itself lay the foundation for the twenty-first century.

My MIT address followed a series of nearly two dozen meetings with nearly 150 leaders of the Massachusetts economic community--CEO's of large and small companies; economists from this state's academic and banking institutions; venture capitalists and other investment decision-makers; real estate developers; advocates for key industrial sectors such as microelectronics, biotechnology, and software; labor leaders; and local officials.

The purpose of these sessions was to learn, listen, and share ideas--on the state of the economy, its possible direction, and the role that the Commonwealth might constructively play. All participants agreed that the Massachusetts economy is in a regional slump which affects the entire Northeast, and that this slump is affecting everything from long-term job growth in the Berkshires to real estate absorption in Boston.

All agreed that the state's current fiscal problems are related to economic performance, and that the public understandably equates the two. Public confidence in the Massachusetts economy has dropped, and that is cause for great concern.

But it was the virtual consensus of the leaders with whom we met that the Massachusetts economy is <u>not</u> grinding to a halt.

On the contrary, we are shifting gears. Our underlying asset base--in education, medicine, technology, capital, entrepreneurship, work ethic, and rebuilt cities--remains

strong. With the third-lowest unemployment rate in industrial America and the third-highest high real personal income of any state, our absolute economic performance is still strong.

But we've lost our edge, and we won't get it back through inertia. In the view of most Massachusetts economic leaders, it is essential not simply to restore the state's fiscal credibility, but also to look beyond it to the strategic economic needs of the next decade.

The 'nineties are ours to win--if we understand the challenges we face and if we tackle them together.

State government is only one partner in the Massachusetts economic community. Most technological innovations come from the academic, corporate, or military laboratory. Business creates most of our jobs and our wealth. The working men and women of Massachusetts turn their skill, pride, and initiative into goods, services, and paychecks. Local officials and community leaders shape the revitalization of downtowns and neighborhoods and the creation of new industrial parks.

But these people and resources do not constitute an economic community without the full partnership of state government. So I have been asking this state's economic leaders some key questions:

Which fundamental investments must the Commonwealth itself make in our economic future?

What do Massachusetts businesses need the state to do to help them innovate and compete successfully?

What can Massachusetts expect business to do to help us bring economic opportunity to the greatest number of our citizens?

And how can the entire Massachusetts economic community--public and private--renew our sense of economic citizenship? How do we take on a global marketplace and win?

The MIT speech was the first public step in our effort to address these questions. With this Discussion Paper, I am inviting as many of this state's economic leaders and citizens as possible to help shape an economic agenda for the 1990's.

Sincerely,

Michael S. Dukakis

1990: the State of the Economy

An economic agenda for the new decade must begin with a realistic assessment of where our economy stands today, and how it got there. The 1980's were a decade of broad, deep, and diversified economic growth in Massachusetts. Without question, Massachusetts "won the 'eighties".

- Between 1983 and 1989, the Massachusetts economy expanded by 439,000 jobs. From the origins of the state's economic recovery in 1975 to 1989, the total expansion was 858,000 jobs--a pace far in excess of national growth for the same period.

- Between 1983 and 1988, average annual unemployment in Massachusetts fell from 6.9% to 3.3%, and was the lowest among the 11 major industrial states for six consecutive years. Even for the slumping year of 1989, Massachusetts posted an annual unemployment rate of 4.0%--second-lowest among the 11 major industrial states and well below the national average.

- As recently as 1988, the Massachusetts economy grew by 58,000 jobs in a year which began with unemployment below the 4% threshold.

- Throughout the 1980's real personal income grew faster in Massachusetts than in any other state. Today our real personal income is now third-highest in the nation.

- In addition to the nationally-acknowledged boom on the 128 and 495 beltways and in the center of the Boston-Cambridge financial-medical complex, Massachusetts also fostered dramatic job growth among dislocated industrial workers, minorities, residents of depressed regions, and welfare recipients.

- The state's tax burden dropped. Thanks in large part to a booming economy, Massachusetts was able to cut taxes on individuals and businesses <u>seven times</u> between 1983 and 1988. State aid to cities and towns increased dramatically, and today Massachusetts property taxes are the lowest in the Northeast. (New Hampshire's are the highest.) Gasoline taxes are fourth-lowest in the country. State and local fees are the third-lowest. The overall Massachusetts tax burden is now thirty-fifth in the country, and $1.2 billion <u>below</u> the tax cap approved by the voters in 1986.

Unfortunately, our economic performance in 1989 didn't come close to matching our record of the previous six years.

- Jobs are flat. In 1989, the Massachusetts economy created no net new jobs. As a consequence, the unemployment rate rose from 3.5% in January to 4.6% in December. Further, some economists believe that Massachusetts employment will remain flat for as long as two years, and that during that time our real personal income growth will also flatten.

  In addition, the unemployment rate has begun to creep up again in certain communities where we have worked particularly hard to create economic opportunity-- in "target areas" like the Blackstone Valley and Southeastern Massachusetts, and among minorities. Black unemployment, for example, was 9.5% in 1989 --nearly a 50% jump from 1988.

- Manufacturing in the Northeast continues to decline. Massachusetts lost 29,000 manufacturing jobs in 1988 and 1989, and the picture is no brighter in most of the other Northeastern manufacturing states. Current forecasts show no recovery in the near term.

  Most of the United States experienced a mild upturn in manufacturing employment in 1987, when the dollar weakened. The Northeast, however, did not. Traditional manufacturing continues to lose jobs, while two factors are causing a new and parallel decline in the "high-tech" electronics sector: the cutback in Defense spending, and the shake-out of a mini-computer sector that has finally become "mature". In 1989 Massachusetts lost an estimated 7500 high-tech manufacturing jobs.

- Construction is down. Real estate development is a largely derivative sector of the economy, and during the explosive growth of the mid-1980's a booming pipeline of retail, office, and R&D space was established. During the six boom years construction employment rose from 78,000 to 143,000; over-development and a predicted construction labor shortage became public issues.

  Commercial real estate is now in over-supply, as is a large inventory of market-rate housing. In addition, we have had to impose a ceiling on state construction and a number of key projects have been deferred.

- Recruitment of adequately trained personnel is a persistent concern. Despite the Massachusetts traditions of educational excellence and the work ethic, many CEO's doubt that they will be able to

recruit enough skilled workers, engineers, and managers. They are also concerned about the availability of quality workers for entry-level jobs in our ever more knowledge-based economy. These concerns reflect not only the uncertain future of our education and training capacity, but the state's flat population and the near tapping-out of the labor force in areas like Metrowest.

Our very high housing costs add to this concern. Even with the current slowdown in demand and prices, homes in Eastern Massachusetts are among the most costly in America.

- Tax revenues have fallen. After several years of double-digit revenue growth--and a FY 1990 growth projection that stood at 6% just four months ago--we now face virtually flat revenue collections in FY 1990 and growth of perhaps 3% in the existing revenue base in FY 1991. At the heart of this drop-off is a steep decline in the sales tax, far out of proportion to the underlying economic slowdown and reflective of at least a temporary decline in consumer confidence.

Winning the Nineties:
A Time to Invest

Massachusetts must get its fiscal house in order, and we must do it now. And as the recent Report of the Crozier Task Force of State Management has made abundantly clear, the fiscal remedy must come on both sides of the ledger.

Spending must be brought permanently within the limits of predictable revenue growth. The deep cuts which the legislature and the Governor have made in state spending this year--nearly a billion dollars since the summer of 1989--must be translated into a thoughtful restructuring of state government activities.

Priorities must be re-set and respected. We need new financing strategies for the seven so-called "budget-busters"--Medicaid, Group Insurance, debt service, the MBTA, public higher education, pensions, and local aid.

But we also need additional revenues, because the shortfall in existing revenue collections has far outstripped our ability to cut responsibly. This has become obvious to the bond rating agencies, whose radical down-grading of Massachusetts borrowing is, in effect, a mandate from the national economic community to raise revenues and restore stability.

But we need additional revenues for another reason--investment in our economic future. The growth of the 1980's was fueled in part by strategic and forward-looking public investment. In the late 'seventies, Massachusetts began a program of sweeping reinvestment in regional highways, mass transit, wastewater systems, and the streets, sidewalks, and other basic infrastructure of our aging communities.

In the 1980's, we made the same kind of commitment to basic education, public higher education, and our employment and training system. By combining our investments in infrastructure and people with a series of specialized capital formation programs, we helped thousands of industrial and commercial enterprises to expand and create new jobs.

Yet we are now in danger, quite simply, of eating our seed corn.

The Crozier Report compares Massachusetts to the 16 other states with which we most clearly compete in economic performance and perception. Our tax burden is now well below most of theirs. But we are investing less than we

need--and less than our competitors--in infrastructure and education.

Massachusetts will not win the 'nineties by balancing the budget for its own sake. We must keep investing in infrastructure and education. And we must help our growing businesses find the capital, the technology, the skilled workers, and the export markets they need.

Massachusetts should set its sights on five growth strategies for the 1990s:

- "New Tech" Industries. The entrepreneurial and academic leadership of Massachusetts is ready to take center stage in industries like biotechnology, electronics, software, and polymers. These industries represent tens of thousand of good, new jobs--and we must do everything we can to encourage their growth.

- The Mega-Projects. In the 1990's, the Commonwealth and its public authorities must build five critical public works projects which together will create thousands of jobs and set the stage for industrial and commercial growth well into the twenty-first century.

- Our Knowledge Base. Alongside this investment in bricks and mortar, the Commonwealth and the entire economic community must renew their commitment to education, to college opportunity, and to an employment and training system second to none.

- Targets for Opportunity. Massachusetts must continue to deliver on its long-standing commitment to revitalize all of its regional economies. Every community in Massachusetts needs economic opportunity--and every community has something to contribute to our overall economic success.

- The Global Marketplace. The 1990's will offer tremendous opportunities for international growth and business development. But Massachusetts will win the 'nineties only if we compete hard enough, manufacture our goods well enough, and meet the ambitious goal of our Export '90's campaign--to double the value of our exports by mid-decade.

"New Tech" Industries

Throughout our history, Massachusetts has been synonymous with economic innovation. From ships to shoes, from textiles to transistors, the Massachusetts economy has always had the ability to invent new things, to make them well, and to sell them all over the world. This state's economic community has enjoyed an unparalleled ability to create new engines of economic expansion.

For a decade and a half, the computer industry in general, and mini-computer manufacturing in particular, served as such an engine. In raw numbers, computers peaked at perhaps one-tenth of this state's total jobs. But mini's were a growth center, the head of an entire economic "food chain". They provided jobs in corporate management, R&D, sales, and employee and customer training--and tens of thousands of jobs in manufacturing.

No one should mistake the current down-turn in mini-computers for the loss of an industry. Digital Equipment Corporation, for example, is planning major expansions in Marlboro, Shrewsbury, Boylston, and Lancaster. Both DEC and Wang have unveiled new product lines--if not entire new product philosophies--that offer the hope of renewed stability and profits.

At the conclusion of the current shake-out, computer makers will still employ hundreds of thousands of Massachusetts workers, and a retooled Big Four will still make their headquarters here.

But Massachusetts needs a new engine--an industry, or several, that hold the promise of rapid growth in manufacturing as well as R&D, and which have the power to spin off many times their weight in derivative jobs.

Two established state programs--the Centers of Excellence and the Massachusetts Technology Development Corporation--have already helped Massachusetts entrepreneurs develop new technologies and bring them to market.

Now it's time to do more--to mobilize our public and private resources in a bid for world leadership in one or more break-through industries. Our academic and industrial leaders have identified important areas of opportunity. It is the Commonwealth's job to respond.

The Biomedical Economy

Massachusetts should be a world center of biotechnology, biomedicine, and related industries. We should be a leader in manufacturing as well as research. And that is our goal. Anyone who doubts the explosive growth potential of these industries should pay attention to what is already happening in Massachusetts:

- The Worcester Biotech Park, the centerpiece of the state's Biotechnology Center of Excellence, has broken ground for its third and final multi-tenant building. It will contain one of the most innovative incubator facilities in the country.

- Next week, BASF will officially name the Worcester park as its North American biotech headquarters, completing the eight-year transformation of the Worcester site from 70 acres of weeds to a center of biotech research and production.

- The Massachusetts General Hospital is renovating some 650,000 square feet of space in the historic Charlestown Navy Yard for biomedical research--strengthening the link between the biomedical economy and major real estate development in the Boston-Cambridge area. The Massachusetts Industrial Finance Agency is serving as investment banker and co-developer for this quarter-billion dollar project.

- Eisai Institute, the American R&D arm of one of Japan's principal pharmaceutical houses, has opened in Andover.

- Johnson & Johnson has established its medical instruments group headquarters in Raynham, and the medical instruments division of Hewlett-Packard, one of America's most important technology-based manufacturers, continues to grow at its Andover and Waltham facilities. Home-grown entrepreneurs continue to open and expand their own biomedical product companies throughout Eastern Massachusetts.

In all, biotechnology--the use of living organisms to produce new pharmaceutical, industrial, or agricultural products--employs some 6,000 Massachusetts workers, mostly in Cambridge and Worcester. According to the Massachusetts Biotechnology Council's newly released Agenda for the 1990s, biotech jobs in Massachusetts can grow to 30,000 or more over the next decade; other estimates are even higher. And related biomedical industries, like pharmaceuticals and medical instrumentation, can add even more jobs.

Starting in 1990, Massachusetts will mobilize its resources behind the expansion of the biomedical economy in four key ways:

- A science-friendly climate. Working closely with industry leadership, we will press for sensible regulation at the local level (genetic research ordinances, for example) and at the national level (commercialization of discoveries in campus laboratories). We will also explore the possibility of establishing an FDA office in Boston.

  It is particularly important that we smoothe the way for biotech manufacturing. One way to do that is to "pre-qualify" sites with adequate space and proper local regulations, as have done so successfully at Worcester. Another is to work with the state's biotech community to establish a shared facility for "Good Manufacturing Processes"--the production testing that new biotech products must undergo. We have agreed to help establish such a center in Massachusetts.

- Education and training. The Governor recently announced that the Bay State Skills Corporation will commit $400,000 over the next two years in a new partnership with the biotech industry--which will match the state contribution. One new program will train high school teachers in biotechnology. Another will fund a one-year, post-secondary certificate program in biotech research and manufacturing skills for entry-level workers.

- Real Estate. The biomedical economy needs space to grow. We will work in close partnership with the City of Boston and with the developers of four major biotech-oriented projects: the Boston Science Center, the South Station air-rights development, the Sears Building, and the remainder of the Charlestown Navy Yard. Together these projects--among the most exciting to come on the scene in years--could put some three million square feet of space for biomedical R&D and manufacturing into the Boston market.

  We will also work with the Greater Worcester biotech community to plan a second biotechnology park with sufficient space for large manufacturing facilities--perhaps on a portion of the former Grafton State Hospital grounds, where the Tufts - New England School of Veterinary Medicine is already located.

- Marketing. We will work with rest of the Massachusetts biomedical community to promote this state as a world capital, especially in biotechnology. This effort will include new, jointly-developed marketing materials and direct appeals to companies in other states and overseas to establish facilities or joint ventures in Massachusetts.

Electronics

A retooled computer industry is an important part of this state's economic future. But our leadership in electronics can and should extend to other, related industries as well.

We have already invested in a flagship. The new $52-million Massachusetts Microelectronics Center at Westboro is one of the two or three finest facilities in the country for training integrated-circuit engineers. Oner 30 electronics companies and ten university engineering departments--including MIT and our three state universities--are direct participants. We have continued to invest substantial capital and operating dollars in "M2C" through the worst of the state's budget crisis, and with good reason.

Starting in 1990, Massachusetts will undertake at least four new initiatives to diversify and expand our electronics base:

- A fully-operational M2C. This winter the new fabrication facility at Westboro begins producing advanced "chips" designed by M2C students, and the Center begins instructing students from throughout the Northeast. We are working with M2C on their plan to affiliate with a corporate partner and achieve full self-sufficiency in chip production.

- Electronics consortia. The national semi- conductor industry has begun a movement toward joint R&D and manufacturing consortia, with federal support, as a cornerstone of the national effort to overtake the Japanese. Two of the moving forces behind the national consortium strategy are Digital and MIT. Massachusetts will be in the forefront of this effort.

  In 1987, our Westboro campus was a finalist for SEMATECH, the national R&D consortium. In 1989, we offered an extraordinary industrial site at Westover Airpark to U. S. Memories, the fledgling manufacturing consortium.

These two efforts, although unsuccessful, have shown the national semi-conductor community that Massachusetts has its act together--industrial and academic leadership, state funding and promotional support, prime sites with all regulatory issues resolved. SEMATECH has already designated and funded M2C as a national Center of Excellence in Microelectronics. There is every reason for Massachusetts to anchor one or more electronics consortia.

The value of national consortia was proven last year, when a high-powered consortium in a related industry--the Open Software Foundation--chose Cambridge as its headquarters.

- Semi-conductor manufacturing. Despite our long-standing leadership in computers, Massachusetts is not a major semi-conductor manufacturing state. That is one reason we built M2C.

  The major California and Japanese semi-conductor companies are now establishing manufacturing plants in locations far from their headquarters. Several have built in Idaho. We will aggressively pursue a share of this industry for Massachusetts, and in sites like the Westover Airpark we have very attractive locations. Massachusetts is about to go recruiting.

- Software. Software is an essential part of the electronics "food chain", and Massachusetts is already a center of both development and production. The Massachusetts Software Council was born at the Governor's conference table, and we are working with the Council to develop education and training programs for this knowledge-intense industry. We are making Massachusetts software a highlight of our export promotion campaign.

  This month Governor Dukakis made Massachusetts the first state in America to prohibit software "piracy"--the duplication of licensed software programs by government agencies.

In addition to our specific efforts to promote the biomedical and electronics sectors, we are working on three strategies to promote the commercialization of new technologies and the emergence of technology start-ups across the spectrum of our economy.

Science Parks--Tomorrow's Centers of Excellence

The Massachusetts Centers of Excellence bring together this state's business, academic, and governmental leadership in five technology-intensive industries to sponsor joint research and to advocate for a supportive tax and regulatory environment. These five technologies are biotech, microelectronics, polymers, marine sciences, and photovoltaics.

Each of these Centers is associated with one or more of our public universities, and each is responsible for a core facility. The Worcester Biotech Park and the Massachusetts Microelectronics Center involve the most extensive capital facilities.

These relationships point to the value of a more general "science park" concept--an industrial park associated with a cluster of academic and industrial research and capable of supporting both R&D and manufacturing.

This idea is certainly not limited to the five Centers of Excellence technologies, or to our public campuses. Engineering departments throughout Massachusetts are nurturing spin-off ventures for which cost-cutting "science parks" close to campus would be a distinct competitive advantage.

State support for "science parks" would involve all forms of public assistance for economic development: the use of surplus state land where appropriate; state funding for infrastructure: careful and expedited management of environmental reviews; and priority access to financial assistance from the Massachusetts Industrial Finance Agency, the Massachusetts Technology Development Corporation, and the Massachusettts Government Land Bank.

In addition to the proposals for a second biotech park in Greater Worcester and a semi-conductor park tied to M2C, here are some ideas for science parks.

- The Polymer Center of Excellence is capable of sustaining parks both in the Five College area around Amherst, and in the Berkshires--through a partnership of the General Electric Plastic Research and Development Center, a cluster of some 44 smaller plastics companies, and the Polymer Center at UMass. The state has already built the necessary connector road to the prime site for a "tech park" adjoining the Pittsfield Airport.

- The Comonwealth is in the process of selecting a site for a world-class Coastal Resources Laboratory for Southeastern Massachusetts University. This project

should be integrated fully with the R&D needs of private industry as well as the Navy.

- The WestMass Development Corporation, one of our best regional non-profit developers, is developing a new park in Hadley to accomodate spin-offs from the UMass engineering community. The state's Land Bank is co-financier.

- University Park in Cambridge is a private development in which the MIT Real Estate department is a partner. In addition to financing the residential portion of the Park, the Commonwealth stands ready to assist any business opportunities which result from the marriage of MIT's Technology Licensing Office and this strategic new park.

Technology Transfer and the Military

The Massachusetts economy is a long-standing beneficiary of defense spending, and the overall cutback in defense is widely taken as a threat to the state's economic position. In fiscal 1988, Massachusetts indeed suffered a 17% drop in defense contracts, and that trend will continue.

Yet Massachusetts is better situated than most other defense-oriented states. Our watchword is diversity; we risk no dependency on a single employer like Boeing or Bath Iron. And nearly one-third of all our defense contracts are for research and development--double the share nationally. Similarly, more of this state's defense contracts go to academic laboratories than in other states.

Two specific federal policies represent opportunities for Massachusetts. First, we have two major procurement centers in this state--the Electronic Systems Division center at Hanscom, and the newly-announced Army center for information and computer systems at Devens. Second, the 1986 Technology Transfer Act instructs federal commanders to facilitate civilian commercial access to the fruits of Pentagon-sponsored R&D.

The Massachusetts Centers of Excellence program is already collaborating with the Army's Natick Laboratories on two commercialization projects, and we are supporting the establishment of a federal Center of Excellence in advanced materials at the Watertown Arsenal.

Governor Dukakis has begun to meet regularly with the Massachusetts Military Coalition, the standing organization of federal base commanders. A principal objective is to bring the sate's military technology transfer officers into an on-going collaboration with the technology licensing

operations of MIT and other research institutions, venture capitalists, entrepreneurs, and state development leaders. We are committed to such a partnership.

MTDC and a New Capital Pool

The Massachusetts Technology Development Corporation is a public venture capital company which has invested in over 50 leading-edge start-ups since its establishment in 1978. Such well-known firms as Spire Corporation, the photovoltaics pioneer, and Interleaf, the desk-top publishing software leader, are MTDC portfolio companies. MTDC also helps start-up firms secure other funding through technical assistance and networking, and is widely respected in the state's entrepreneurial community.

It is clear that after years of being "awash in venture capital", Massachusetts is showing signs of a capital gap for start-ups whose initial financing need is under $1 million. At the same time, Massachusetts banks are making only a limited commitment to working capital loans for small technology companies.

The Governor is sponsoring legislation to set up a new "Commonwealth Fund" at MTDC. Through this new program, MTDC will use a portion of its assets to seed an investment fund whose public and private co-investors would include the state pension fund. MTDC has already managed successfully a $2 million asset pool for the pension fund.

At the same time, the Massachusetts Industrial Finance Agency--MIFA--has begun using its new investment banking capabilities to place substantial taxable revenue bonds with state pension funds. The Governor has directed MTDC, MIFA, and PRIM (our state pension fund's investment arm) to explore a new debt-financing strategy for leading-edge technology companies.

The Mega-Projects

In the decade of the 1990s, Massachusetts has a historic opportunity to ensure Greater Boston's long-term position as the hub of an expanding New England economy. We can do this by building five critically important public infrastructure projects which together link the economic resources of the entire region to the commercial, educational, and financial dynamo at its heart--and to the global economy beyond.

All five mega-projects are ready to begin in earnest. Each has a funding strategy which avoids principal reliance on state tax dollars. The two largest--the Boston Harbor cleanup and the Artery- Tunnel--have been in the planning, approval, and financing stages for literally seven years. In 1990, we will begin construction on both.

Moreover, we now have an added incentive to act. For while the mega-projects were conceived as strategic pre-conditions for long-term investment in the region, it is now clear that they also represent the single largest counter-cyclical employment program at our disposal.

The Harbor cleanup and Artery-Tunnel projects alone will put ten thousand people to work for ten years building ten billion dollars' worth of essential economic facilities. Every economist we have consulted--not to mention every construction trades leader--has said the same thing. Moving ahead with the mega-projects is the single most effective step the Commonwealth can take to jump-start the economy of the 1990's.

The Harbor Cleanup

All of the major prerequisites for the full-scale start of this $6.1 billion dollar initiative are now in place. The Massachusetts Water Resources Authority has selected the treatment technologies, and sited the necessary facilities at Deer Island, Nut Island, Quincy Shipyard, and Walpole.

The Commonwealth's construction of a new Suffolk County House of Correction in Boston is underway and on schedule, clearing the way for the secondary treatment plant at Deer Island. The barging ports at Deer Island and Quincy Shipyard and under construction, and the MWRA will begin barging construction materials to the treatment plant site in 1990. In short, the cleanup is on track.

The environmental need for this enormous investment is compelling. Boston Harbor is fundamental to the quality of

life in this region, and its pollution is sad testimony to over a century of neglect.

But the economic need is equally compelling. For without the cleanup, the entire metropolitan sewer system would be in permanent non-compliance with the federal Clean Water Act. New development would be illegal--not only along the waterfront, but in each of the 55 communities served by the MWRA system. Growth would be against the law in metropolitan Boston.

We cannot let that happen.

The Artery-Tunnel

Without this $4.4 billion dollar investment, the heart of the regional economy would be choked by 14-hour traffic jams. Growth of the airport, seaport, and financial district would be impossible. And sometime in the 1990's, Massachusetts would have to spend well over two billion dollars to rebuild the decaying Artery bridge decks anyway--closing them down, creating chaos, and emerging with very little added highway capacity.

We cannot let that happen either.

The Artery-Tunnel project will do four things:

- It will rebuild and widen the Central Artery underground, while maintaining all regional and local traffic flows throughout the construction period. The result will be the elimination of the notorious "choke point" in the North Station area and the doubling of through traffic capacity at the center of the system.

- It will create a Seaport Access Road joining the regional highway system with the South Boston waterfront. This new facility will unlock the principal expansion site for both the financial district and the maritime economy.

- It will provide the long-awaited third harbor tunnel, linking the interchange of the Artery and Turnpike directly to Logan Airport.

  Moreover, this will be a transit tunnel as well--buses will use dedicated "high-occupancy vehicle" lanes to access the tunnel and take airline passengers directly to Logan. Those passengers will check into their flights at South Station, making the Third Harbor Tunnel an essential ingredient not only

of Logan's growth, but of its new emphasis on alternative means of access to the air terminals.

- It will connect to the major reconstruction project already underway in Charlestown, which is replacing the unsafe and unsightly elevated interchange of the Artery, I-93, and the Mystic-Tobin Bridge with a safer facility built mostly underground. This project will be completed in 1992.

The Artery-Tunnel project is eligible for 90% federal funding, and recent events make clear that aggregate funding at or near that level is virtually assured. This October we received $728 million in federal highway funds for the project, and we anticipate $830 million next year--moving the project into full-scale construction. The final environmental review is approaching completion, and several key parcels of land have been acquired in anticipation of the project.

This winter we will break ground on the South Boston Haul Road, the first phase of construction in the Seaport Access Road - Third Harbor Tunnel corridor. It is essential that the entire project follow on schedule.

The Old Colony

Massachusetts is in the concluding stages of a massive, two-decade transformation of the MBTA from a crumbling transit system to one of America's best. By the time Artery-Tunnel construction reaches full swing, MBTA capacity to and from downtown Boston will be one-third greater than in 1985. We have already completed the billion-dollar Southwest Corridor project, the rehabilitation of most commuter rail routes, and the expansion of most downtown transit stations.

One major project remains, and it will correct the worst transportation planning mistake the Commonwealth has made in our lifetime--the 1959 abandonment of the Old Colony commuter network south of Boston.

A full environmental review is now underway on the $400-million project to fully restore the Old Colony system--from South Station to the Plymouth, Greenbush, and Middleboro Branches. One-half of the cost will be paid by the federal government.

The restored Old Colony system will serve 30,000 passengers a day. It will relieve congestion on the Southeast Expressway, connect expanding South Shore businesses to South Station and Logan Airport, and stimulate transit-

related development in central Boston. Construction should begin in 1990, with full service on-line in 1994.

High-Speed Rail to New York

Governor Dukakis has for three years led the effort of the Coalition of Northeast Governors to establish high-speed passenger rail service from Penn Station to South Station. Last Fall, the new Federal Railway Administrator publicly endorsed the project.

It will consist of federally-supported track improvements, principally in Connecticut and New York, and the purchase by AMTRAK of new rolling stock. Technology already proven in Europe and Japan will enable AMTRAK to provide three-hour service from downtown Boston to downtown New York.

High-speed rail to New York will enhance Boston's status as a tourism and convention destination. Like the Old Colony project, it will strengthen the development climate at the heart of the region, especially the financial district and the new Fort Point Channel expansion area. And with some 25% of all domestic flights at Logan serving the northeast shuttle market, high-speed rail is the single most effective step we can take to decongest the airport in the 1990s.

The Massachusetts Turnpike Reconstruction

This Fall, the Massachusetts Turnpike Authority announced its plan to invest $603 million over the next decade in the complete reconstruction of the state's principal east-west lifeline. The improvements will be funded through the Turnpike's first toll increase in a decade. Under this program, the Turnpike will rebuild ten bridges and ten linear miles of roadway each year.

The Payoff: Gateway Projects

On November 13, 1989, Governor Dukakis presided at the dedication of the South Station train room. The theme was "More than a Train Station", and in fact this event offered an exciting glimpse into the future.

All five mega-projects converge at South Station. The Artery-Tunnel and Harbor cleanup pass next door. The express bus link to a modernized Logan Airport will originate at South Station. The Old Colony and New York rail projects will terminate there, intersecting with the Red Line and inter-city bus stations. And the Turnpike

feeds its traffic into the Artery - Tunnel - Seaport Access system at South Station's back door.

But that's not all. For the Boston Redevelopment Authority is now soliciting development proposals for a two-million square-foot private development on the air rights over the trackbed. The City calls the project a "Technopolis"--a mixed-use, urban-scale development centered on emerging technology. The South Station Technopolis will focus on biotech.

In short, South Station is a gateway of enormous power--a "ground zero" where the regional infrastructure of tomorrow and the new-tech economy of tomorrow come together.

And there are others:

- North Station, where construction of a multi-model state transportation center began this past summer, will also house the New Boston Garden and a mixed-use gateway development of regional proportions.

- World Trade Center II, the first of the anticipated mixed-use developments in the Fort Point Channel district being planned by the Boston Redevelopment Authority and MassPort. To support the growth of this district, the state and City are now studying a new South Boston Piers Transit system linked to South Station, downtown, and Roxbury.

- The Prudential Center, where the City is about to approve a $400-million modernization and expansion project made possible by the proximity of the transit system and the Turnpike. The state granted its environmental approval this month.

- Ruggles Center--the Southwest Corridor's "Parcel 18" --where the state, the City, and a private development team are nearing the start of a $300-million mixed-use project at the heart of the new Orange Line and commuter rail systems. The nearby medical area is a prime focus for marketing the new space.

- The Charlestown Navy Yard, where over a million square feet of biomedical development, a spectacular new Aquarium, and a water transportation center will prove the importance of a clean harbor and a twenty-first century transportation system for the regional economy.

The Payoff: Modernizing the Air and Sea Ports

The five mega-projects will enable the Massachusetts Port Authority to make majoir improvements in our air and sea ports--the vital links between New England's regional economy and the world market.

The seaport modernization has been underway for over a decade, and will benefit from the state and city's new waterfront policy reserving capacity for maritime commerce and industry. MassPort has already invsted some $200 million in the new seaport--not a penny of it state money.

What's new is the airport modernization, which will be undertaken in careful coordination with the Airport end of the Third Harbor Tunnel project. This winter MassPort will outline a plan for an expanded international terminal, complete with a major new federal customs and inspection center; the realignment of the internal roadway loop and the creation of a centralized ground transportation complex in its center; and long-term improvements to Terminal A.

By the time the new Tunnel is completed, an international airport for the twenty-first century will be taking shape around it.

The Knowledge Base

No matter how much we invest in bricks and mortar, our economy is ultimately no more than the men and women who work in it and who create its innovations. The recent MIT study Made in America places education and training at the top of its list of national economic priorities.

Massachusetts must improve every aspect of its education and job training systems--and do a better job of integrating them as well. And while building our knowledge base must involve every part of the economic community, state government has a central role to play.

A qualified work force begins with citizens who are economically literate, and today that includes a basic grasp of math, science, and computers, as well as an awareness of other cultures. Thanks to a sweeping education reform act passed in 1985, Massachusetts was beginning to show real improvement in K-12 public education--as evidenced by rising test scores and lower drop-out rates. The state budget shortfall, and the resultant cut in state aid to cities and towns, has slowed us down again.

We need to get school reform back on track, and the recent report of the Hamill Task Force on Local Finance shows the way. We strongly support its two principal ideas--enabling cities and towns to raise revenues more adequately and flexibly, and restoring the state's commiment to annual revenue sharing.

If we have good schools, we can reach for excellence in the two other cornerstones of a knowledge-based economy--college opportunity and a first-class employment and training system.

College Opportunity

In the next twenty years, 85% of all the new jobs we create in Massachusetts will require some post-secondary education. We have no greater economic need than college opportunity for every Massachusetts citizen who wants it.

We will not build tomorrow's economy without the full participation of our 29 public university and college campuses. In the 1960s, this system served some 50,000 students. Today it serves over 175,000. In the 1980s Massachusetts expanded its funding of public higher education more than any other state in America.

In the last two years, the state revenue shortfall has forced us first to halt the growth in public college investment, and then to cut spending, course offerings, and enrollments. This is not acceptable. We are determined to restructure public higher education and to control costs--but a principal reason for solving the state's fiscal problems is to stop the higher education cuts and begin building the system back toward excellence.

We have also had to slow down our ambitious plan to rebuild and expand the physical plant of our public colleges and universities. This Fall we announced final plans for the new campus of Middlesex Community College in Bedford, and in 1990 we will finalize plans for the long-awaited northern campus of North Shore Community College.

In 1990, we will also take the next steps in site assembly and planning for the $350 million downtown campus of the University of Lowell. But even the first $80 million phase of that campus will require expanded revenues and bonding capacity.

The College Opportunity Fund

On January 6, Governor Dukakis signed into law the legislation creating the Massachusetts College Opportunity Fund. Under this plan, families of young children will be able to invest in a guaranteed portion of their future college tuitions.

Parents will be able to buy College Opportunity Bonds in denominations as low as $50. The accumulated earnings of each subsrciber will be redeemable at participating colleges--public and private--for a share of tuition established at the time the bonds are bought.

The College Opportunity Fund is a great idea--one that will cost the state nothing but give the next generation of Massachusetts' young people a leg up on the education they need to compete in tomorrow's economy.

An Employment and Training System Second to None

In the last two years, Massachusetts has begun a fundamental reform of its employment and training system. Gone are the old Division of Employment Security, which ran the unemployment compensation system, and the Office of Training and Employment Policy, which oversaw federally-funded job training programs. Today we have a single, consolidated Department of Employment and Training.

At the same time, we have strengthened the 16 regional Private Industry Councils--the "PIC's" of the federal job training system. Under their new designation as "Regional Employment Boards", these bodies are reaching out to include broad leadership from business, labor, education, community groups, and government. The Boards have been given important new powers to coordinate job training programs with the activities of community colleges and regional vocational-technical schools.

Together, the Department of Employment and Training and the Regional Employment Boards will work with the entire job market--with the businesses, the people, the training centers, the schools, the unions, and the regional trends that make up the employment side of the economy.

A priority of the new system will be to provide men and women in the existing workforce with the skills they need to keep up with technological change. It is clear that employers have the same concern; it is simply much harder to change jobs in mid-career than it used to be, and there is a serious mismatch of experienced workers and necessary skills.

The new employment system will build on the creativity and responsiveness that has characterized the best of the Commonwealth's job programs:

- "ET", the nationally-recognized partnership of our welfare, social service, and job training agencies which has helped 71,000 public welfare recipients land real jobs

- the Reemployment Assistance Program, which moves in when a plant closes or a number of large layoffs occur. "REAP" has helped more than 35,000 laid-off workers find new jobs--often in new careers--at an average 92% of their former wage

- the new "Employment Express" program, which helps experienced workers who lose their jobs to find suitable new employment right away. Employment Express aims to help 19,000 unemployment insurance claimants find jobs more quickly and save the employer-financed UI trust fund $19 million a year

- "Building Opportunities", which is helping the Artery-Tunnel and Harbor cleanup projects recruit and train hundreds of minority citizens, women, and inner-city residents for careers in construction, drafting, engineering, and accounting

Bay State Skills--a National Model

The state's 15 community colleges and 26 regional vocational-technical schools are in the front lines of career training. One of the most innovative public training organizations in America, the Bay State Skills Corporation, provides an essential link between businesses in need of trained workers and people who need jobs--by arranging, and paying half the cost, of customized training programs. The actual training is provided by community colleges and vocational-technical schools.

Bay State's flexibility, and its well-earned reputation in the economic community, have enabled it to respond effectively to changing needs. As we will outline in subsequent sections of this paper, Bay State's agenda for 1990 includes major commitments to two of the state's principal economic priorities-- biotechnology and exporting.

Bay State is a model of how the community college system can be used not only to provide one- and two-year certificate or Associate Degree programs, but specialized career training as well. It is a model of flexibility and responsiveness to the changing needs of the Massachusetts economy. It should be expanded.

Targets for Opportunity

The initiatives we have outlined thus far are intended to have a statewide impact. The mega-projects, for example, are not simply Boston projects: they are a key to the long-term economic success of the metropolitan region, Massachusetts, and New England. Similarly, our efforts to nourish new technologies are not restricted to Boston and Cambridge, but have impact in Worcester, the Pioneer Valley, Lowell, and Southeastern Massachusetts.

But if the economic benefits of a successful new decade are to reach the greatest possible number of our citizens, we need more--we need specific strategies to rebuild the grass-roots economic capacity of <u>every region in Massachusetts</u>.

"Targets for Opportunity" is the name we have given to our regional development agenda--and it is working. From the days when our older cities were a physical and economic shambles and regions like Southeastern Massachusetts were dismissed as "the end of the universe", we have made remarkable progress.

The ingredients were not lofty, abstract programs, but an unprecedented partnership of the Commonwealth, local government, and regional business communities. We rebuilt and expanded public infrastructure. We identified strategic sites for industrial parks and made them happen. And in the systematic revitalization of "city and town centers", we found a focus for restoring community pride and confidence in every part of Massachusetts.

With strong state support, the downtowns of Lowell and Springfield have become national models of revitalization, and eight other "Heritage State Park" cities are on the way back. Myles Standish Industrial Park in Taunton was transformed in six years from 400 acres of vacant land to 62 companies employing 4000 people.

Along the "Northern Tier", the industrial and commercial base of Northern Worcester County has been expanding since the mid-1980's, and the Orange-Athol area--which had 20% unemployment in 1982 and an economy as different from that of downtown Boston or Route 128 as one can imagine--has begun to revitalize its town centers and expand its industrial base.

In 1978 Governor Dukakis and the legislature created the Massachusetts Industrial Finance Agency. In 1989 MIFA celebrated two stunning milestones: the investment of five billion dollars, and the creation of 80,000 jobs. This

investment has taken place throughout the regional economices of Massachusetts, and much of it has gone to rebuild the base--by reviving urban centers and retooling traditional industries.

During the economic expansion of the 1980s, unemployment in Southeastern Massachusetts, the Merrimac Valley, and Northern Worcester County closed to near the statewide average, and jobs grew at a faster pace than statewide. These achievements brought opportunity to people and communities which might have missed out. And revitalizing our "Targets for Opportunity" has been a key to expanding our workforce, enabling the statewide economy to keep growing.

But rebuilding a regional economy from the ground up takes time and patience. We intend to keep our Targets for Opportunity agenda going strong through four strategies.

Turnaround Projects

Often the momentum of an entire regional economic strategy relies on the progress of a key project or two. Typically these projects involve major state investment or the redevelopment of state land. We are committed to move ahead on the following:

- the mixed-use redevelopment of Parcels 18 and 22 in the Southwest Corridor, Dudley Station, and Boston State Hospital. The Commonwealth has already invested heavily in transit, in parkland, in the Roxbury Community College campus, and in the Franklin Park Zoo. We have joined the City and the community in affordable housing and economic development projects throughout Greater Roxbury. But the full-scale mobilization of the community's economic resources clearly depends on these four breakthrough projects, and we remain strongly committed to their success.

- Greylock Glen and the Massachusetts Museum of Contemporary Art, which together will create construction jobs, elevate cultural and recreational tourism in the Northern Berkshires, and help revitalize the centers of North Adams and Adams

- the Riverfront Park, Emerson College, and downtown Heritage Park and museum projects in Lawrence

- the Blackstone Valley Heritage Park and the Route 146 - Mass. Turnpike - Worcester Connector in the Blackstone Valley

- the expansion of such key regional industrial centers as Myles Standish Park and Westover Airpark, and the creation of new technology parks in Fitchburg and Pittsfield

- the continued redevelopment of the Fall River and New Bedford waterfronts.

Regional Infrastructure and the Gasoline Tax

In every region of Massachusetts, economic growth depends on a first-class network of highways and bridges. As a nation, we are falling farther behind our transportation needs every year, and while Massachusetts has done better than most states, we are starting to slip. Two facts tell the story:

- Fully half the 5000 bridges in this state are substandard.

- As 1990 begins, some $400 million in essential regional highway projects are engineered and ready for bid--but cannot be built for lack of funding.

The answer is to raise the Massachusetts gasoline tax--now the fourth-lowest in America. Raising the gas tax by ten cents a gallon will produce nearly $280 million a year in revenues, dedicated to roads and bridges.

Moreover, this new revenue stream will enable the Commonwealth to undertake a significant amount of highway construction on a cash basis. This will in turn relieve the pressure on our debt service account and enable us to expand state funding for other regional infrastructure, such as wastewater and water supply systems.

Massachusetts Enterprise Zones

In the 1980s Massachusetts invested abundantly in the revitalization of older cities and regions. State grants paid for industrial park access roads and sewer pipes, downtown garages and city commons, neighborhood streets and sidewalks. Until 1986, the Massachusetts Industrial Finance Agency had unlimited access to tax-exempt bond financing for industrial growth and downtown commercial development.

Federal tax reform and shrinking state resources now limit these programs. But the need for targeted investments on favorable terms is no less compelling. In 1990, we will introduce legislation creating a Massachusetts version of "enterprise zones", based on these features:

- Massachusetts currently provides an urban renewal program to its cities and towns. Within districts approved by the state, local governments can assemble land by eminent domain, designate private redevelopers, and undertake public improvements with up to 50% state reimbursement for debt service. We propose to expand this program, designating as "enterprise zones" many additional renewal districts in downtowns, neighborhoods, and industrial parks.

- Recent legislation authorizes MIFA to issue pools of tax-exempt municipal bonds for city and town public works projects. This mechanism is expected to yield lower rates than other tax-exempt municipal borrowing, and we propose that enterprise zones be given top priority status for its use.

- Massachusetts should authorize cities and towns to fund public works in enterprise zones through revenue bonds based on tax-increment financing and betterment assessments. These are proven techniques which in other states enable localities to tightly link strategic private development with the public infrastructure that makes it possible.

- Enterprise zones should have first priority for our remaining federally tax-exempt industrial revenue bond capacity. Enterprise zones should also have first priority for such prime community development programs as Small Cities Block Grants and the Massachusetts Government Land Bank.

- We should encourage cities and towns to use so-called "121A" corporations in enterprise zones--private urban renewal ventures with land-assembly powers and favorable local tax agreements.

The Massachusetts Housing Partnership

Since 1985, the Massachusetts Housing Partnership has mobilized banks, developers, community groups, and local governments to create thousands of units of housing at all income levels.

The Partnership has also helped rebuild the economic fabric of communities by reclaiming vacant lots and abandoned apartments; turning landmark mills and schools into housing; and making it possible for young families to live in the part of Massachusetts where they grew up.

We need still more affordable housing. Some of it will have to come from production programs in which Massachusetts is a recognized national pioneer:

- state-funded public housing on small, low-rise sites that fit into their communities

- the Home Ownership Opportunity Program--private, mixed-income developments in which the state provides affordable mortgages for first-time buyers

- "SHARP"--private, mixed-income rental developments in which the state writes down interest costs and rents of low- and moderate- income tenants.

In addition to production, we are planning a major new initiative to make the softening housing market work for us--by mobilizing local housing partnerships to bring existing units in our overbuilt inventory into the "affordable market".

The Massachusetts Bankers' Program

On January 15, the Massachusetts Bankers' Association announced a Community Investment Program designed to channel $400 million in dedicated bank funds--and $1 billion overall--into low-income minority neighborhoods. These communities are an integral part of our Targets for Opportunity agenda, both in Boston and statewide.

On the housing side, three separate $100 million pools will fund equity investment in rental developments, construction and acquisition loans, and mortgages for first-time home-buyers. The state will tailor its existing production and affordable mortgage programs to help our poorest neighborhoods take maximum advantage of these new bank products.

In addition, the banks will fund a business and economic development program providing $65 million in equity, direct loans, credit, and technical assistance. The state's Community Development Finance Corporation will manage the equity portion of this initiative.

The Global Marketplace

To win the 1990's, Massachusetts must "go international" with a vengeance. Made in America cites an inability to export as a major barrier to American industrial growth and employment. We agree, and our new Export '90's campaign has the ambitious goal of doubling Massachusetts exports in the next five years.

Massachusetts is already an important export state from a statistical point of view, but a handful of major Route 128 companies do the lion's share. Seventy percent of our small and medium-sized manufacturing companies do no exporting at all.

One reason is that we have fallen behind in the global competition of making things. Another reason is that too many Massachusetts firms lack the confidence to try exporting. A Massachusetts CEO who has been an exporter for years recently told a business audience, "The greatest trade barrier you face is in your own minds." The Massachusetts economic community must lift its sights and take on the world.

The timing couldn't be better. For while Massachusetts companies have an important and growing presence in the Pacific Rim, New England has a special geographic and cultural relationship with what we call the Atlantic Rim--Europe and Canada.

For decades we in New England have been taught to believe that we are on the outskirts of the American economy--far from energy supplies, raw materials, communications and financial centers, and the heartland of national markets. But we are near the center of the Atlantic Rim. There is a new economic frontier out there, and for once we are in the best position to cross it. When the European Economic Community emerges in 1992 as a single trading market of four trillion dollars and 325 million citizens, the Massachusetts economic community must be ready.

The Centerpiece: Export '90's

Over the last year, the Governor and his economic team met with companies all over Massachusetts, to learn who is exporting, who is not, what the barriers are, and how the Commonwealth can help bring them down. In September, at a State House Conference on Exporting, the Governor launched Export '90's--not a single program, but a mobilization of all the state's economic development resources to promote export trade.

- Massachusetts will spend $3 million per year directly on export promotion. The effort will be coordinated by the state's Office of International Trade, which will be the central resource for trade policy, technical assistance, information referrals, and expertise in principal markets--Europe, Canada, and Asia.

  Every major agency within the Economic Affairs secretariat will devote a significant portion of its time and resources to the Export '90's mission--particularly the Office of Business Development, which works with the state's regional business communities.

  The Office of International Trade will also work closely with the United States Department of Commerce and the Commonwealth's Washington office to help companies secure export licenses and meet other federal requirements.

- We will triple the number of trade shows in which we help Massachusetts businessmen participate--from eight last year to 25 this year. The Massachusetts Port Authority will spearhead this effort in close cooperation with the Office of International Trade. MassPort's involvement emphasizes the role our air and sea ports must play in linking the state's regional economies with the global marketplace--and the importance of the transportation mega-projects as highways to the world.

  Massport will also provide matching funds for up to ten local and regional business groups each year which decide on their own to participate in shows overseas.

- The Bay State Skills Corporation, through the New England Export School, will provide professional export training to Massachusetts companies. Detailed instruction will be provided in marketing, financing, and other key topics.

- Through the Massachusets Industrial Finance Agency, Massachusetts will expand its export loan guarantee program, which it operates in conjunction with the national Export-Import Bank.

- Massachusetts will deliberately raise its profile as a state that cares about exporting--within the Comonwealth through a series of eight regional Export '90's conferences led by the Governor; and internationally through trade missions, an expansion of our foreign offices in Tokyo and London, and a

presence in Brussels to help us take maximum advantage of EC92.

- Massachusetts will work with private developers to plan a teleport, enabling smaller businesses to transmit voice and data communications all over the world. We are currently exploring the development of teleports in Massachusetts and India, a step which would help position us effectively in one of the world's fastest-growing markets.

Manufacturing Competitiveness

Manufacturing has been a way of life in Massachusetts for nearly four centuries, and it has always defined our place in the world economy. Export promotion will be only as successful as the product it has to sell. So alongside Export '90's, Massachusetts must work even harder to help entrepreneurs build better mousetraps at a more competitive price and bring them to a wider market.

The loss of manufacturing jobs in the Northeast has not, at least until recently, reflected a decline in output; manufactured goods represent as large a share of the Massachusetts "gross state product" in the 1980s as they did two decades ago. But as productivity improves and job opportunities per unit of output decline, the Massachusetts manufacturing community has only one way to keep people at work--become more productive and expand the market.

We help bring new technologies to market through the Centers of Excellence and the Massachusetts Technology Development Corporation. But equally important, we are committed to help traditional manufacturing industries in Massachusetts secure a competitive edge and a niche in the global market.

Some competitiveness issues affect our entire manufacturing base. The Massachusetts economic community must work hard to overcome a classic geographic disadvantage which works its way into the cost of the goods we produce--our high cost of energy. That is why the Commonwealth's energy policy emphasizes the two most cost-effective sources at our disposal--conservation and cogeneration. Our most progressive utilities have produced conservation plans that have won national recognition, and a series of private cogeneration developments is teaching us how to bring heat and electricity on-line affordably.

We have also initiated a pair of programs aimed at specific mature manufacturing companies:

- the Industrial Services Program, which works closely with manufacturers in distress. For 335 firms with

over 20,000 workers. ISP assistance has helped make the difference between going out of business, mere survival, and new economic viability. The ISP also runs a series of regional "extension services" for key industrial sectors--machine tools in western Massachusetts, metal working in central Massachusetts, needle trades in the southeast.

- the Center of Excellence in Applied Technology. This Center of Excellence--unlike the five others--promotes not a single new product technology, but the adoption of new process technologies in the state's traditional manufacturing community. The Center staff works with management and labor, and has already helped create a more productive shop floor at a scale manufacturer in Quincy, a hose manufacturer in Springfield, and other companies across Massachusetts.

Tourism

As the world becomes smaller, the link between tourism and exporting becomes more obvious. In the mid-1980's, we launched the "Spirit of Massachusetts" campaign and made this state competitive in tourism investment for the first time in recent memory. The state's revenue shortfall has forced us to cut our tourism budget, and tourism has begun to suffer. That costs us revenues and jobs.

We must regain our competitive position in the tourism promotion business, and we must put special emphasis on international tourism. Through a new partnership of the Commonwealth, the Massachusetts Port Authority, and several international airlines, Massachusetts will begin in 1990 an international tourism campaign worth nearly one million dollars a year. Our success in attracting visitors from Canada, Europe, and Asia will inevitably pay off in international trade down the road.